Bruhat Bangalore Mahanagara Palike
Executive Engineer Yelahanka Project Division

Name of Work: Modified Estimate For Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits

Sl No	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
1	KSRRB 200-9. **Clearing and grubbing road land** including uprooting rank vegetation, grass, brush, shrubs, saplings and trees of girth upto 300mm, by manual means, in area of thorney jungle, removal of stumps, disposal of unserviceable materials, stacking of serviceable materials labour charges complete as per specifications. MORTH / Chapter 2 (P.No-138, I No-18.12)								
	Jungle clearance	2	2165.00	5.20		22516.00			
	Towards Airforce	1	1917.00	5.25		10064.25			
						32580.25	**Sqm**	**15.61**	**508577.70**
	Approved Amount	**15.61**							
2	KSRRB M200-15.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per specifications. **iii) Dismantling Stone Masonry**. A. Rubble Stone masonry in lime mortar. MORTH Specification No. 202. (P.No. 139, I.No. 18.26).								
	Compound wall	1	2000.00	0.45	0.60	540.00			
		1	2000.00	0.60	0.60	720.00			
						1260.00	**Cum**	**309.45**	**389907.00**
	Approved Amount	**309.45**							
3	**Dismantling burnt brick masonry** in clay mortar/lime mortar/cement mortar and stacking the bricks within a radius of 50m and removing the debris to a distance upto 200m. (P.No. 270, I.No. 37.47).								
	Compound wall	1	1999.50	0.20	1.80	719.82			
						719.82	**Cum**	**264.46**	**190363.60**
	Approved Amount	**264.46**							
4	**Removing B.S. slab of Drain and stacking.** (P.No. 27, I.No. 5.32).								
	Compound wall	1	1797.00		1.80	3234.60			
						3234.60	**Sqm**	**105.60**	**341573.76**
	Approved Amount	**105.60**							
5	KSRRB 300-1. **Earthwork excavation by manual means** in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 1.5 m, excavated surface leveled and sides neatly dressed, the disposed earth to be leveled neatly after breaking of clods complete asper specifications.MORTH / Chapter 3(I No-19.1, P No-143)								
	Nitte Meenakshi College Road								
	RCC Drain LHS	1	1767.80	1.40	1.20	2969.90			
		1	331.30	1.20	1.10	437.32			
	RCC Drain RHS	1	1081.50	1.40	1.10	1665.51			
		1	369.30	1.20	1.10	487.48			
	Culverts								
	LHS								
		1	31.00	2.00	1.20	74.40			
		11	9.00	1.60	1.20	190.08			
		2	7.00	1.80	1.20	30.24			
	RHS								

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
		9	14.70	2.00	1.20	317.52			
		1	7.60	1.60	1.20	14.59			
		1	30.00	1.60	1.20	57.60			
		1	17.20	1.60	1.20	33.02			
		2	8.00	1.80	1.20	34.56			
	Debris	1	239.00	2.10	0.35	175.67			
	Over Burden Earth	1	146.00	2.20	0.35	112.42			
						6600.31	**Cum**	**212.12**	**1400029.07**
	Approved Amount	**212.12**							
6	KSRRB M2100-10. Providing and laying **Plain cement concrete of mix 1:3:6** with OPC @ 220kgs, with crushed 40mm and down size graded granite metal coarse aggregates @0.89cum and fine aggregates @ 0.46cum, in foundation mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days including cost of all materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. (P.No-222,I No-27.18)								
	Nitte Meenakshi College Road								
	RCC Drain LHS	1	1767.80	1.40	0.15	371.24			
		1	331.30	1.20	0.15	59.63			
	RCC Drain RHS	1	1081.50	1.40	0.15	227.12			
		1	369.30	1.20	0.15	66.47			
	Culverts								
	LHS								
		1	31.00	2.00	0.15	9.30			
		11	9.00	1.60	0.15	23.76			
		2	7.00	1.80	0.15	3.78			
	RHS								
		9	14.70	2.00	0.15	39.69			
		1	7.60	1.60	0.15	1.82			
		1	30.00	1.60	0.15	7.20			
		1	17.20	1.60	0.15	4.13			
		2	8.00	1.80	0.15	4.32			
	Ramp Concrete								
	Gate No-03	1	12.00	1.50	0.15	2.70			
	Gate No-05	1	7.00	1.50	0.15	1.58			
	Gate No-06	1	7.50	1.50	0.15	1.69			
	Gate No-07	1	8.00	1.50	0.15	1.80			
	Gate No-08	1	7.00	1.50	0.15	1.58			
	NCC House Opp	1	5.00	1.50	0.15	1.13			
						828.93	**Cum**	**5476.44**	**4539563.25**
	Approved Amount	**5476.44**							
7	Providing and laying plain/reinforced cement concrete for side drains using **M20 nominal mix concrete with OPC at 300 kgs.** with 20mm and down size granite metal coarse aggregates at 0.69 cum and fine aggregates at 0.43 cum machine mixed, well compacted for walls and bottom including centering, shuttering, cost of materials, HOM of machinery, curing etc., complete excluding cost of steel as per MORTH specification No. 1500, 1700, 2200. including cost of materials, labour, HOM complete as per specificationsdo- Wall & bottom thickness 15cm (I No-37.59.2,P No-271)								
	Nitte Meenakshi College Road								
	Raft								
	RCC Drain LHS	1	1767.80	1.20	0.15	318.20			
		1	331.30	0.90	0.15	44.73			

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
	RCC Drain RHS	1	1081.50	1.20	0.15	194.67			
		1	369.30	0.90	0.15	49.86			
	Wall								
	RCC Drain LHS	2	1767.80	0.15	0.67	355.33			
		2	331.30	0.15	0.60	59.63			
	RCC Drain RHS	2	1081.50	0.15	0.67	215.76			
		2	369.30	0.15	0.60	66.47			
						1304.65			
	Culverts Raft								
	LHS								
		1	31.00	1.40	0.25	10.85			
		11	9.00	1.27	0.20	25.09			
		2	7.00	1.50	0.20	4.20			
	RHS								
		9	14.70	1.40	0.25	46.31			
		1	7.60	1.20	0.20	1.82			
		1	30.00	1.00	0.20	6.00			
		1	17.20	1.00	0.20	3.44			
		2	8.00	1.50	0.20	4.80			
	Culverts Wall								
	LHS								
		2	31.00	0.28	0.60	10.42			
		22	9.00	0.30	0.50	29.70			
		4	7.00	0.30	0.50	4.20			
	RHS								
		18	14.70	0.28	0.60	44.30			
		2	7.60	0.30	0.50	2.28			
		2	30.00	0.30	0.50	9.00			
		2	17.20	0.30	0.50	5.16			
		4	8.00	0.30	0.50	4.80			
						212.37			
	Ramp Concrete								
	Gate No-03	1	12.00	1.50	0.15	2.70			
	Gate No-05	1	7.00	1.50	0.15	1.58			
	Gate No-06	1	7.50	1.50	0.15	1.69			
	Gate No-07	1	8.00	1.50	0.15	1.80			
	Gate No-08	1	7.00	1.50	0.15	1.58			
	NCC House Opp	1	5.00	1.50	0.15	1.13			
						10.46			
						1527.48	**Cum**	**7141.23**	**10908077.63**
	Approved Amount	**7141.23**							
8	KSRRB M2200-6. **Providing T.M.T. steel reinforcement for R.C.C. work** including straightening, cutting, bending, hooking, placing in position, lapping and/or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per disign (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200(I No-28.8.2,P No-229)								
	For Drain, 75 kgs/cum		1304.7	75.00		97.85			
	For culvert, 85kgs/cum		212.37	85.00		18.05			
						115.90	**Tn**	**65702.62**	**7614926.42**

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
	Approved Amount	**65702.62**							
9	Providing and fixing **RCC Precast cover slab of 100mm thick** for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions								
	Nitte Meenakshi College Road								
	RCC Drain LHS	1	1767.80	0.90		1591.02			
		1	331.30	0.90		298.17			
	RCC Drain RHS	1	1081.50	0.90		973.35			
		1	369.30	0.90		332.37			
	missing Slab	30	0.60	0.90		16.20			
						3211.11	**Sqm**	**2360.82**	**7580855.12**
	Approved Amount	**2360.82**							
10	Providing and fixing **RCC Precast cover slab of 250mm thick** for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions								
	LHS	1	31.00	1.00		31.00			
		11	9.00	1.27		125.87			
		2	7.00	1.50		21.00			
	RHS	9	14.70	1.00		132.30			
		1	7.60	1.20		9.12			
		1	30.00	1.00		30.00			
		1	17.20	1.00		17.20			
		2	8.00	1.50		24.00			
	Deduct					-91.10			
	Precast Culvert Slab								
	Gate No-03	1	12.00	1.50		18.00			
	Gate No-05	1	7.00	1.50		10.50			
	Gate No-06	1	7.50	1.50		11.25			
	Gate No-07	1	8.00	1.50		12.00			
	Gate No-08	1	7.00	1.50		10.50			
	NCC House Opp	1	5.00	1.50		7.50			
						369.14	**Sqm**		
				Upto 125%		**90.00**	**Sqm**	**5472.77**	**492549.30**
				Above 125%		**279.14**	**Sqm**	**5472.77**	**1527661.36**
	Approved Amount	**5472.77**							
11	KSRRB M300-14. **Excavation for roadwork** in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location to a lead of 1km and complete as per specifications. MORTH Specification No.301 (P.No-143, I No-19.14)								
	For Road formation	2.00	2099.40	6.34	0.20	5324.08			
						5324.08	**Cum**	**59.69**	**317774.27**
	Approved Amount	**59.69**							
12	KSRRB M300- **Construction of Embankment** with Material Gravel/ Murrum. KSRRB M300-53. Construction of embankment with approved material Gravel/Murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement Table 300- 2 complete as per specifications.(Including cost of gravel / murrum, watering charges & compaction by vibratory roller to 95% of proctors density) MORTH Specification No. 305 (P.No-147,I No-19.60)								
	For Road formation	2.00	2099.40	6.59	0.60	16598.28			
						16598.28	**Cum**	**348.02**	**5776478.17**

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
	Approved Amount	348.02							
13	KSRRB 300-50. **Scarifying bituminous course 50mm to 75mm thick** along with premix carpet / surface dressing by mechanical means attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM complete as per specifications. (P.No-146, I No-19.56)								
	For Road formation	1.00	2099.40	5.50		11546.70			
						11546.70	**Sqm**	**41.32**	**477124.08**
	Approved Amount	41.32							
14	KSRRB 300-58. **Compaction of original ground** with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occuring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3 (P.No-147, I No-19.64)								
	For Road formation	1.00	2099.40	16.72		35099.87			
						35099.87	**Sqm**	**6.43**	**225613.18**
	Approved Amount	6.43							
15	Construction of **granular sub-base Grading-V** as Sub-base and drainage layer by providing coarse graded crushed stone aggregates of granite/ trap/basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98 % proctor density, complete as per specifications Clause 401 of MORTH V Revision.(I No-20.5,P No-153)								
	For Road formation	1.00	2099.40	16.72	0.200	7019.97			
						7019.97	**Cum**	**2014.64**	**14142723.37**
	Approved Amount	2014.64							
16	KSRRB M400-17. Providing, laying, spreading and compacting cushed stone aggregates of granite / trap / basalt to **wet mix macadam** specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications(P.No-155,I No-20.18)								
	For Road formation	2.00	2099.40	8.03	0.250	8430.25			
						8430.25	**Cum**	**2021.07**	**17038101.86**
	Approved Amount	2021.07							
17	KSRRB M500-6. **Providing and applying primer coat** with S.S. bitumen emulsion on prepared surface of granular base such as WMM including cleaning of road surface and spraying primer at the rate of 0.60 kg / sqm using mechanical means complete as per specifications Clause 502 of MORTH V revision(P.No-158,I No-21.6) issue rate Dated 01-07-2020								
	For DBM								
	For Road formation	2.00	2099.40	8.03		33720.98			
						33720.98	**Sqm**	**30.30**	**1021821.65**
	Approved Amount	30.30							
18	KSRRB M500-17. **Providing and laying dense graded bituminous macadam** using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications Clause 505 of MORTH V revisionusing 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (P.No-160,I No-21.17.6) issue rate Dated 01-07-2020								
	For Road formation	2.00	2099.40	8.03	0.050	1686.05			
						1686.05	**Cum**	**6471.83**	**10911816.62**
	Approved Amount	6471.83							

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
19	KSRB 500-7. **Providing and applying tack coat** using 80/100 grade bitumen(VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications (P.No-161,I No-21.7) issue rate Dated 01-07-2020								
	For BC								
	For Road formation	2.00	2099.40	8.03		33720.98			
						33720.98	**sqm**	**12.86**	**433500.09**
	Approved Amount	**12.86**							
20	**Providing and laying bituminous concrete 40mm thick** with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. using – do – using 40-60 TPH capacity HMP with mechanical paver grading II (30-45mm) with 5.4 % of modified bituminus binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic) (P.No.171, I.No.21.78.12) issue rate Dated 01-07-2020								
	For Road formation	2.00	2099.40	8.03	0.040	1348.84			
						1348.84	**Cum**	**7613.21**	**10268997.91**
	Approved Amount	**7613.21**							
21	KSRB 4-1.6 ; Providing and laying in position **plain cement concrete of Mix 1:2:4** with OPC @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregtes @ 0.53cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM curing complete as per specifications. Specification No. KBS 4.1, 4.2.(P.No-13,I No-4.6,KPWD SR 2018-19)								
	For Kerb Stone								
	For Rcc Drain	2.00	1964.05	0.20	0.100	78.56			
	For median	2.00	1280.20	0.20	0.100	51.21			
						129.77	**Cum**	**5805.18**	**753337.75**
	Approved Amount	**5805.18**							
22	KSRB 2.3 : **Filling available excavated earth** (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. Specification. No. KBS 2.9 (P.No-7, I No-2.10)								
	For median	1.00	1280.20	1.00	0.300	384.06			
						384.06	**Cum**	**214.87**	**82,523.16**
	Approved Amount	**214.87**							
23	Providing and fixing pre cast solid cement concrete **kerb stones** made out of CC 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation ete.,complete (P.No-27,I No-5.30)								
	For Kerb Stone								
	For Rcc Drain	2.00	1964.05			3928.10			
	For median	2.00	1280.20			2560.40			
						6488.50	**A**		
	Length/length of Kerb					14418.89	**B**		
	A/.45=B					**14419.00**	**Nos**	**437.09**	**6302357.45**
	Approved Amount	**437.09**							
24	KSRRB 800-1. **Painting two coats** after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8(P.No-180,I No-24.1)								

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
	For Kerb Stone								
	For Rcc Drain	2.00	1964.05		0.40	1571.24			
	For median	2.00	1280.20		0.40	1024.16			
						2595.40	**Sqm**	**85.40**	**221640.02**
	Approved Amount	**85.40**							
25	KSRRB M800-13.**Road Marking with Hot Applied Thermoplastic Compound** with Reflectrising Glass Beads on Bituminous Surface/ Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 standards specified. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803(P.No-182,I No-24.15)								
	LHS	2.5	2711.40	0.15		1016.78			
	RHS	2.5	1280.20	0.15		480.08			
						1496.85	**Sqm**	**459.13**	**687241.26**
	Approved Amount	**459.13**							
26	KSRRB M800 **Road markers / Road stud** KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS: 873 part 4:1973 complete as per specifications.(P.No-187,I No-24.41)								
	LHS	3.0	2099.40			6298.20			
	RHS	3.0	1280.20			3840.60			
						10138.80			
	For 5.0m interval					2156.00			
						2156.00	**Nos**	**360.87**	**778040.57**
	Approved Amount	**360.87**							
27	Supply and fixing of Retro Reflective **Single Arrow Road Name Signboard** of size 1600mm x 900mm made out of retro reflective sheeting conforming to Type XI standards of ASTM D 4956 - 09 & as per IRC 67-2012 for full back ground of blue colour & white letters and fixed over 4 mm thick Aluminium Composite Material sheet having minimum 0.5 mm thick Aluminium skin on both sides with back side painted grey colour and fixed over back support frame SS angle of 15mm x 20mmx 1.2mm, supported by 38mm OD stainless steel pipe all round in 304 grade and 2 nos of vertical posts of 50 mm OD stainless steel pipe of 202 grade firmly fixed to the ground by means of properly designed foundation of size 450mm x 450mm x 600mm in 1:1.5:3 ratio cement concrete. The background shall be blue in color with letters and border in white, the item includes earthwork excavation, cost of all materials, loading, unloading, lead, lift, transportation etc., complete. as per direction of engineer incharge of work clause 6.9 of IRC 67-2012 for Type XI retro reflective sheeting from the sheeting manufacturer & a certified copy of test reports from an independent test laboratory conforming to clause 6.7 of IRC 67-2012 including outdoor weather exposure report for the retro reflective sheeting offered shall be submitted by the contractor for technical qualification in the tender.(P.No-190, I No-24.59 of PWD BCSR 2018-19)								
		5	1.60	0.90		**7.20**	**Sqm**	**14236.55**	**102503.15**
	Approved Amount	**14236.55**							

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
28	KSR 18 MS00-2. **Retro-Reflectorised Traffic Signs** - Manufacturing, supply and installation of retro-reflectorised cautionary, mandatory and informatory signboards made out of cube corner micro prismatic grade sheeting confirming to 900 MM octagon stop board type XI standards of IRC :67:2012 specifications & fixed over 4 mm thick aluminium composite panel sheet having minimun 0.30 thick aluminium skin on both sides & fixed over a support frame of 25x25x3 mm MS angle and mounted on 75mm dia OR 75x75x6mm Mild steel angle of total height 2.70m with clear height of not less than 2.10 m from the ground level to the bottom of the sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and white colour with brands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M20 grade cement concrete of 45 cm x45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary for satisfactory completion of the work as directed by engineer in charge. 10 years warranty for retro reflective sheeting from the original sheeting manufacturer as per clause 6.9 in IRC 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier.-900 MM octagon stop board type XI (P.No.180, I No 24.2.6 of PW P&IWTD SR 2018-19)								
		8				8.00	Nos	5403.90	43,231.21
	Approved Amount	**5403.90**							
29	**Retro-Reflectorised Traffic Signs** Providing and fixing of retro - reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing. (Standard data Book data) 900 MM Equilateral triangle - TYPE XI (P.No-180, I No-24.2.1 of PWD BCSR 2018-19)								
		10				10.00	Nos	3697.79	36,977.93
	Approved Amount	**3697.79**							
	Street light Electrification								
30	Fabricating, supplying and erection of ...Mtrs long hot dip Galvanized Octagonal pole with BSEN 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangements, including suitable boards, Bakelite sheet and MCBs as per IS specifications suitable to withstand the wind speed of 47 m/sec for .....Mtrs pole in single section and single joint welded as per IS 9595/IS 10178AWS having dimensions bottom .....mm, top....mm with 3mm thick, suitable base plate and 4Nos of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65micron as per ASTM-A123 and 153 etc., (excluding foundation) as per drawing appended. 7 meters - Top 70mm and bottom 130mm dia P.13/I.4.2.5								
						0.00	Nos	11040.12	0.00
	Approved Amount	**11040.12**							
31	Double Arm Bracket with 1500mm Standard 40/50MM dia P.16/I.4.7.5								
						0.00	Nos	3146.84	0.00
	Approved Amount	**3146.84**							

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
32	Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output. Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mouting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB.LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008 . Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body part. Warranty of 2 Years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED manufacturer & Cree/Nichia/ Lumileds/Osram make LED SourceLED Streetlight 120 Watts P.66/I.12.8.5								
		0				0.00	Nos	9228.41	0.00
	Approved Amount	**9228.41**							
33	Fabricating supplying and mounting MS box made out ... SWG suitable for floor / wall mounting, fully weather proof with provision for better heat dissipation, provided with hinged front cover, equipped with tamper proof locking arrangements, with suitable size clamps with necessary cable entry pipe with gland and box should be finished with 7tanks treatment with powder coated paint and finally finished with approved colour etc., complete.16SWG P.30/I.5.42.2								
						0.00	Sqcms	0.37	0.00
	Approved Amount	**0.37**							
34	Supplying and fixing angle iron frame work fabricated out of M.S. angle iron.. and M.S. flat ... with bolts, washers etc., and painted with 2 coats of red oxide and then two coats of approved paint.40x40x6mm P.30/I.5.41.1								
		16				0.00	Nos	258.03	0.00
	Approved Amount	**258.03**							
35	Supplying and fixing Moulded Case Circuit Breaker (MCCB) over the existing wood/panel board using necessary screws, bolts, nuts, necessary phase separators, handle and wiring complete. Protection of Overload and Short circuit with thermal Magnetic/Micro processor release and Earth Fault as per IS-13947. (Icu = Ics)FOUR POLE 100Amps 25kA. P.26/I.5.14.7								
		2				0.00	Nos	6464.48	0.00
	Approved Amount	**6464.48**							
36	Supplying and fixing miniature circuit breakers on existing MCB distribution boards using necessary fixing materials and 'C' Type curve, indicator ON/OFF, energy cross-3 with Short circuit breaking capacity of 10K and complete wiring as required confirming to IEC 60898. 40 Amps DP P.27/I.5.17.5								
		4				0.00	Nos	1349.83	0.00
	Approved Amount	**1349.83**							
37	Supplying and Fixing of. mm dia class A GI pipe bracket up to 2 Mtrs long bent at suitable angle and fixing to this bracket 1x40/2x40 watts fluorescent tube street light fitting of all capacities to GI or CI or rail or RCC pole / wall using suitable clamps, bolts, and nuts and wiring using suitable capacity wires.Using 32mm dia G.I.Pipe I.14.1								
		12				0.00	Nos	843.87	0.00
	Approved Amount	**843.87**							

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
38	Supplying of 1.1 KV LT UG cable XLPE or Heat resistant PVC insulated, PVC extruded Inner sheath armoured UG LT cable as per IS-1554 (Part-1) or IS-7098 Part-1, Armouring strip thickness in average +5% and resistivity 14 Ohms/Kms (Max) as per IS-3975 4 core 16 sqmm P.40/I.6.4.4								
		1	2900.00			0.00	m	151.51	0.00
	Approved Amount	**151.51**							
39	Supplying of 1.1 KV LT UG cable XLPE or Heat resistant PVC insulated, PVC extruded Inner sheath armoured UG LT cable as per IS-1554 (Part-1) or IS-7098 Part-1, Armouring strip thickness in average +5% and resistivity 14 Ohms/Kms (Max) as per IS-3975 3.5 core 35 sqmm P.40/I.6.4.6								
		1	200.00			0.00	m	227.73	0.00
	Approved Amount	**227.73**							
40	Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe / stoneware pipe / on wall / on pole as required.In existing trench/duct.6 sqmm to 16 sqmm P.41/I.6.5								
		1	2900.00			0.00	m	11.94	0.00
	Approved Amount	**11.94**							
41	Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe / stoneware pipe / on wall / on pole as required.In existing trench/duct. 25 sqmm to 75 sqmm P.41/I.6.5.2								
		1	200.00			0.00	m	15.61	0.00
	Approved Amount	**15.61**							
42	Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc., complete.(As per Civil SR KSRB I-2, P-7)In soil (ordinary) P.41/I.6.6.1								
		1	2500.00			0.00	m	78.05	0.00
	Approved Amount	**78.05**							
43	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:confirming to latest amendments.1.5 sqmm P.5/I.2.3.2								
						0.00	m	21.12	0.00
	Approved Amount	**21.12**							
44	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:confirming to latest amendments.10 sqmm P.5/I.2.3.6								
						0.00	m	116.62	0.00
	Approved Amount	**116.62**							
45	Providing Rcc Pole pedstal of Size 0.5x0.5x1.6 Mtrs Including digging of pit, tor steel, anchoring bolts nuts ,templates ,Centring,1;4;8base concrete,1;2;4pedestal concrete and etc coplete as per the data sheet enclosed 18 pwd sr 14-15								
						0.00	Nos	4259.00	0.00
	Approved Amount	**4259.00**							
46	Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all-round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 12 mm dia P.40/I.6.1								
						0.00	Nos	3050.00	0.00
	Approved Amount	**3050.00**							

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
47	Thyristor based single/ Three phase smart street light control and monitoring system Remotely control and and monitorable smart street light system by using web or mobile application .smart control system has hardware ruggedness over field issues like line cross, line short, lighting and any other irregularities in voltage. It has some features like 1.Remote lighting management.2.Precise lighting turnoff.3.Load ballancing.4.Load power regulation.5.Status tracking. It works on the basis of some of these features 1) Main Control Unit (Mother board) : Handles controlling , data handling and other communication process. 2) Communication unit: GSM/GPRS quad bandwith RS232 interface wireless communication unit 3) Gate Driver Unit: Firing angle controllable board for driving the thyristor 4) Switching Thyristor: SCR 110 AMPS dual thyristor modules for switching 5) Embedded Firmware: Firmware to control , handle , process the data and communicate it wirelessly.6) Metal Enclosure : IP66 weather prof metal enclosure.7) Transformers: Customized step down transformers for various purposes.8) Wiring and other device assembly components.Three Phase AR								
						0.00	Nos	52300.00	0.00
	Approved Amount	**52300.00**							
48	Supplying and fixing L.T. cast Iron pot heads suitable for 1.1 KV class UG cable filled with necessary bitumen/insulating compound complete with terminals, clamps, bolts, nuts and washers etc.35Sqmm I.6.1								
						0.00	Nos	337.09	0.00
	Approved Amount	**337.09**							
	EIRL								
	Shifting Transformer and OD, RMU. and Laying UG Cable 400 sq mm ,240 Sq mmand 95 sq mm								
	Material Cost								
E1	11KV 3X400 Sqmm XLPE UG Cable Round Armed.								
		4.00				4.00	Kmtr	2245566.00	8982264.00
E2	Heat shrinkable 11KV 400 Sqmm UG Cable indoor pot head XLPE.								
		15.00				15.00	Nos	4268.00	64020.00
E3	Labour Charges For For Heat shrinkable 11KV 400 Sqmm UG Cable indoor pot head XLPE.								
		15.00				15.00	Nos	1709.00	25635.00
E4	Straight through joint kits Heat Shrinkable type suitable for 3x400Sqmm								
		14.00				14.00	Nos	9706.00	135884.00
E5	Labour Charges For Straight through joint kits Heat Shrinkable type suitable for 3x400Sqmm								
		14.00				14.00	Nos	1865.00	26110.00
E6	11 KV, 3 core, XLPE HT UG Cable Round armed 3 X95 Sqmm								
		1.20				1.20	Kmtr	782621.00	939145.20
E7	Straight Through Jointing Kits HS Type suitable for 95 Sqmm Cable								
		10.00				10.00	Nos	6481.00	64810.00
E8	Labour Charges For Straight Through Jointing Kits HS Type suitable for 95 Sqmm Cable								
		10.00				10.00	Nos	1865.00	18650.00
E9	Heat shrinkable Indoor type Cable Termination Kit for XLPE Cable, 3X95 Sqmm.								
		12.00				12.00	Nos	3319.00	39828.00
E10	Labour Charges For Heat shrinkable Indoor type Cable Termination Kit for XLPE Cable, 3X95 Sqmm								
		12.00				12.00	Nos	1709.00	20508.00
E11	11 KV, 3 core, XLPE HT UG Cable Round armed 3 X240 Sqmm								
		0.65				0.65	Kmtr	1471370.00	956390.50
E12	Straight Through Jointing Kits HS Type suitable for 240 Sqmm Cable								
		2.00				2.00	Nos	11227.00	22454.00

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
E13	Labour Charges For Straight Through Jointing Kits HS Type suitable for 240 Sqmm Cable								
		2.00				2.00	Nos	1865.00	3730.00
E14	Heat shrinkable Indoor type Cable Termination Kit for XLPE Cable, 3X240 Sqmm.								
		1.00				1.00	Nos	4159.00	4159.00
E15	Labour Charges For Heat shrinkable Indoor type Cable Termination Kit for XLPE Cable, 3X240 Sqmm.								
		1.00				1.00	Nos	1709.00	1709.00
E16	Heat shrinkable Outdoor type Cable Termination Kit for XLPE Cable, 3X240 Sqmm.								
		3.00				3.00	Nos	4715.00	14145.00
E17	Labour Charges For Heat shrinkable Outdoor type Cable Termination Kit for XLPE Cable, 3X240 Sqmm.								
		3.00				3.00	Nos	1709.00	5127.00
E18	Labour Charges For Eartwork Excavation For Cable Trench Of 0.5 To 0.75 Mtr Width And Depth Upto 1mtr Including Trial Pits Deposting On Bank								
			3500.00			3500.00	Cmtr	226.00	791000.00
E19	Sand								
			500.00			500.00	Cmtr	1700.00	850000.00
E20	Labour Charges For Sand								
			500.00			500.00	Cmtr	96.59	48295.00
E21	GI Pipe, 150 mm Dia for drain crossing, cable raising etc.,.								
			400.00			400.00	Mtr	1243.00	497200.00
E22	Labour Charges For GI Pipe, 150 mm Dia for drain crossing, cable raising etc.,.								
			400.00			400.00	Mtr	50.00	20000.00
	PART C: DTC SHIFTING								
E23	Spun pole 11.0 mtr long								
		3.00				3.00	Nos	16850.00	50550.00
E24	Labour Charges For Spun pole 11.0 mtr long								
		3.00				3.00	Nos	2901.00	8703.00
E25	Single pole transformer structure kit for 250 kVA								
		3.00				3.00	Set	26734.00	80202.00
E26	Labour Charges For Single pole transformer structure kit for 250 kVA								
		3.00				3.00	Set	2238.00	6714.00
	Concreting Materials For 11 Mtrs Spun Pole								
E27	Labour Charges For Base Concreting 1;4;8 1000*1000*150mm								
		3.00				3.00	Each	730.00	2190.00
E28	Labour Charges For Pole Concreting 1;4;8 1000*1000*150mm								
		3.00				3.00	Each	12177.00	36531.00

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
E29	Labour Charges For Coping Concreting 1;4;8 1000*1000*150mm								
		3.00				3.00	Each	1930.00	5790.00
E30	Labour Charges For Construction Of Platform [1.5*1.5*1.2] Mtr In Size Stone For Erection Of Transformers/Heavy Equipmemt								
		3.00				3.00	Per Structure	26401.00	79203.00
E31	HT Single top support with bolts, nuts & washers								
		9.00				9.00	Kmtr	78.00	702.00
E32	Labour Charges For HT Single top support with bolts, nuts & washers								
		9.00				9.00	Kmtr	70.00	630.00
E33	Rabbit ACSR Conductor for jumps								
		1.30				1.30	Kmtr	36497.00	47446.10
E34	Labour Charges For Rabbit ACSR Conductor for jumps								
		1.30				1.30	Kmtr	3443.00	4475.90
E35	Alkathene tube 19mm dia and in coils of 30 mtrs								
		9.00				9.00	Coil	458.00	4122.00
E36	Earthing materials pipe type for grounding as per Drawing No. BESCOM/GM/CP/15 & 34/Dt: 24.10.07.								
		12.00				12.00	Set	1501.00	18012.00
E37	Labour Charges For Earthing materials pipe type for grounding as per Drawing No. BESCOM/GM/CP/15 & 34/Dt: 24.10.07.								
		12.00				12.00	Set	631.00	7572.00
E38	Bolt And Nuts Of Various Sizes								
			30.00			30.00	Kgs	84.09	2522.70
	Part C - Proposed Material for LT Line								
E39	9Mtr's long RCC Pole								
		25.00				25.00	Nos	6258.00	156450.00
E40	Labour Charges For 9Mtr's long RCC Pole								
		25.00				25.00	Nos	1166.00	29150.00
E41	Labour Charges For Digging Of Pits 1.6m Depth For Errection of 7.5/8 M Long Steel/Rcc/psc/pcc Supports								
		80.00				80.00	Nos	1151.00	92080.00
E42	LT 2 Pin cross arms								
		80.00				80.00	Nos	115.00	9200.00
E43	Labour Charges For LT 2 Pin cross arms								
		80.00				80.00	Nos	106.00	8480.00
E44	LT Aerial Bunched Cable 3x95 + 1x70 + 1x35 Sqmm Street light (Insulated messenger cum Neutral)								
		1.50				1.50	Kmtr	467298.00	700947.00

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
E45	Labour Charges For LT Aerial Bunched Cable 3x95 + 1x70 + 1x35 Sqmm Street light (Insulated messenger cum Neutral)								
		1.50				1.50	Kmtr	22469.00	33703.50
E46	Piercing Connector Suitable for 16 Sqmm - 95 Sqmm AB Cable - Service Connections								
		80.00				80.00	Nos	235.00	18800.00
E47	Labour Charges For Piercing Connector Suitable for 16 Sqmm - 95 Sqmm AB Cable - Service Connections								
		80.00				80.00	Nos	85.00	6800.00
E48	Suspension Clamp Assembly 16 to 70 mm (Excluding pole clamp & Eye Hook)								
		80.00				80.00	Set	196.00	15680.00
E49	Labour Charges For Suspension Clamp Assembly 16 to 70 mm (Excluding pole clamp & Eye Hook)								
		80.00				80.00	Set	127.00	10160.00
E50	Universal Hook and Bolts & Nuts								
		80.00				80.00	Nos	314.00	25120.00
E51	Labour Charges For Universal Hook and Bolts & Nuts								
		80.00				80.00	Nos	169.00	13520.00
E52	Dead End Clamp/Anchor Clamp Assembly 16 to 70 Sqmm Bare Messenger								
		20.00				20.00	Set	206.00	4120.00
E53	Labour Charges For Dead End Clamp/Anchor Clamp Assembly 16 to 70 Sqmm Bare Messenger								
		20.00				20.00	Set	127.00	2540.00
E54	Pole clamp for HT/LT AB cable								
		50.00				50.00	Set	103.00	5150.00
E55	Labour Charges For Pole clamp for HT/LT AB cable								
		50.00				50.00	Set	211.00	10550.00
	Part B -Releasing And Refixing								
E56	Labour Charges For Releasing Of 8mtr PCC/PSC Pole								
		25.00				25.00	Nos	1166.00	29150.00
E57	Labour Charges For Releasing Of 8mtr PCC/PSC Pole Re errection								
		55.00				55.00	Nos	2215.00	121825.00
E58	Labour Charges For Releasing And Re Strining Of LT AB Cable								
		1.90				1.90	Kmt	22469.00	42691.10
E59	Labour Charges For Releasing And Re-fixing Of Single Pole Transformer Structure Kit For 250kva								
		3.00				3.00	Set	2238.00	6714.00
E60	Labour Charges For Releasing And Re-fixing Of GOS 200A Single Work								
		9.00				9.00	Set	700.00	6300.00

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
E61	Labour Charges For Releasing And Re-fixing Of H Frame For GOS Mounting								
		3.00				3.00	Set	174.00	522.00
E62	Labour Charges For Releasing And Re-Wiring Of Lt Wiring Kit								
		3.00				3.00	Set	644.00	1932.00
E63	Labour Charges For Releasing And Re-fixing Of LTD BOX								
		3.00				3.00	Nos	501.00	1503.00
E64	Labour Charges For Releasing And Re Hoisting Of 1*250kva Transformer								
		3.00				3.00	Nos	1001.00	3003.00
E65	Labour Charges For Releasing And Re-fixing OfDTC Metering Box With DTC Meter								
		3.00				3.00	Nos	511.00	1533.00
E66	Labour Charges For Releasing And Re-fixing Of DTC Meter								
		3.00				3.00	Nos	631.00	1893.00
E67	Labour Charges For Releasing And Re-fixing OfHG Fuse Unit								
		3.00				3.00	Set	375.00	1125.00
	PART B - Providing Compact RMU PORTION (2OD+3VL) & OD								
E68	Labour Charges For Flat Form of Size As Per Item No-04 With Labour								
		3.00				3.00	Set	26401.00	79203.00
E69	Route and Joint Indicating Stones								
		2.00				2.00	Nos	130.00	260.00
E70	Labour Charges For Route and Joint Indicating Stones								
		2.00				2.00	Nos	68.00	136.00
E71	Labour Charges For Foundation With Reinforcement CC 1;2;4 As Per Labour Charges Item No 33.9								
			12.96			12.96	Cmtr	5441.00	70515.36
E72	Labour Charges For Providing Reinforcement As Per Labour Charges Item No 28.1								
			126.00			126.00	Kgs	60.48	7620.48
E73	Labour Charges For Suplying Of Frame Of MS Channel 100*50mm And MS Angle 40*40*5mm Welding Etc								
			150.00			150.00	Kgs	50.00	7500.00
E74	Labour Charges For Rod Type Earthing With 40mm Dia 3,mtrs Long Ms Rod As Per Specification								
		6.00				6.00	Nos	2000.00	12000.00
E75	Labour Charges For Lettering The RMU With Enamel Paint And Also Writing Singel Line Diagram Of Each Panel Caution Board Danger Board Including Cost Of Paint								
		9.00				9.00	Nos	656.00	5904.00
E76	Labour Charges For Earthwork Excavation For RMU Founadation Deposting Ogf Earth On Bank Up To Lead of 50mtrs and With A Lift Upto 1.5m								
			29.97			29.97	Cmtr	189.00	5664.33

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
E77	Labour Charges For Fixing Founadtion Frame Of MS Channel 100*50mm And MS Angle 40*40*5mm Welding Fixing In Concrete Aliging The RMU On Founadtion Bed Assembly Of Units								
		9.00				9.00	Nos	3120.00	28080.00
E78	Earthing materials pipe type for grounding as per Drawing No. BESCOM/GM/CP/15 & 34/Dt: 24.10.07								
		12.00				12.00	set	1501.00	18012.00
E79	Labour Charges For Earthing materials pipe type for grounding as per Drawing No. BESCOM/GM/CP/15 & 34/Dt: 24.10.07								
		12.00				12.00	set	631.00	7572.00
								Total Construction Cost	120605426.08
								12% GST For 1st Part Bill	3129507.65
								18% GST For 2nd Part Bill[S.R Items]	17014715.22
								Sub Total	140749648.95
								Miscellaneous and Rounding off	44,536.33
								Grand Total Including GST	140794185.28

Assistant Engineer,
Yelahanka Project Division,
BBMP Bangalore

Asst. Exec. Engineer,
Yelahanka Project Division,
BBMP Bangalore

Executive Engineer,
Yelahanka Project Division,
BBMP Bangalore

Technical Sanction
Accorded For Rs 14,07,94,185.28
Head of A/C 3856
CER NO 20 Dt 15.09.23

CE